THE VETERINARY RECORD

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Collection of Semen by means of the Urethral Fistula

L. E. A. ROWSON

With the rapid development of artificial insemination in Britain during the last few years a number of technical difficulties naturally have been encountered. Some of these have been easily overcome, but a condition or group of conditions is often met in the bull involving a derangement of the neuromuscular mechanism of the sex act. The symptoms of these conditions are that the bull becomes slower at service, often rests his head on the cow's hind-quarters, and becomes very sleepy with no attempt at coition. Some of the causes of inhibition of service are well known and involve various associations with the act of service, most of these associations being either painful, or at least distracting. An example is the use of the artificial vagina at too high, or too low, a temperature, or holding it at the incorrect angle so that pain is inflicted as service takes place. These associations are built up over a period and are always connected with the act of serving, until the bull eventually refuses to serve at all. Such a bull is often difficult and sometimes impossible to cure with the result that he is useless for A.I. purposes. Fortunately there appears to be no such inhibition when the animal is turned loose with females, and a bull showing these symptoms and refusing to serve into the artificial vagina has been known to serve 27 times in 24 hours. The problem, therefore, arises as to how such animals, if they fail to respond to the various forms of treatment, can be brought into useful service again. It is a well-known fact that certain natives make an incision into the urethra of the stallion, and then use him as a teaser, the sperm escaping *via* the fistula, and it was decided to try a similar method in the bull. If this worked satisfactorily the inhibited animal could be allowed to serve a cow and a method devised for collecting the semen issuing from the fistula. A cannula was therefore designed which could be introduced into the urethra of the bull. A number of points had to be considered in the design of the tube:—

1. It had to be *in situ* under all conditions.
2. It had to be designed so that when not in use for collecting semen, urine could be passed normally, since it is undesirable to have the hind legs and hocks continually wet.
3. It was assumed that as in the case of the native stallions, the semen would take the line of least resistance, and pass out *via* the fistula instead of *via* the penis, but a plug was available for introduction should this prove not to be the case.

A cannula shaped like a letter "J" was finally decided upon (Fig. 1) with a replaceable screw plug fitted at the external opening "B." The end of the bent arm was given a rounded and raised lip to help maintain the rubber connection in place. When not in use plug "B" can be screwed into position so that the bull can urinate normally through the straight tube "C" (Fig. 1) and penis.

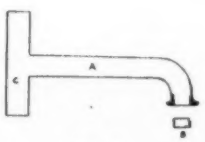

FIG. 1.

The cannula was made of brass and plated with nickel, but the photograph of the *post-mortem* specimen (Fig. 6) shows how unsatisfactory this was and how badly corroded the plating became. A stainless steel or tantalum tube would be far more satisfactory. The site chosen for the introduction of the cannula was a point about eight inches below the anus and behind the sigmoid flexure (Fig. 2). It was thought that this was the point least likely to get fouled with faeces or to be lain upon when the animal was at rest.

The operation was performed under chloroform and an incision made directly down on to the urethra. At this point it is surprisingly deep—at least one and a half inches below the skin surface. A small incision was made into the urethra itself, and

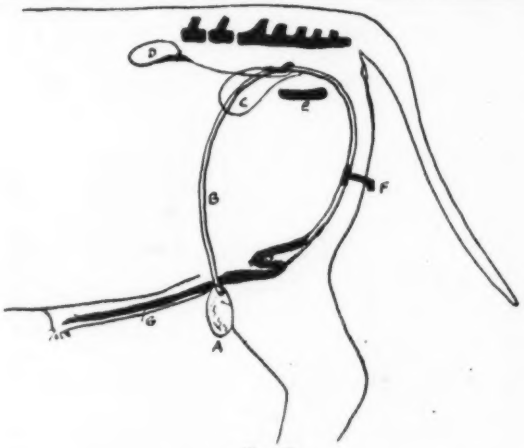

FIG. 2.
A—Testicle; B—Vas Deferens; C—Bladder; D—Kidney; E—Pubis; F—J. Tube; G—Penis.

at this point there was considerable bleeding which greatly hampered the operation. It was assumed that the point of the scalpel had penetrated through the urethra and into the erectile tissues beyond. It would probably simplify the operation greatly if a bougie or sound could be passed up the urethra to define it and give the operator something on to which to cut down.

Having made the urethral incision the straight arm of the cannula was slipped into the opening which was then stretched by using the handle of the scalpel as a lever, the fulcrum being the other end of the straight tube. The cannula will suddenly jump into position and the stretched urethra jerks back into its normal position. The urethral incision was not stitched and the wound was closed by one or two deep gut structures followed by interrupted skin sutures. It is a mistake not to stitch the urethra since urine tends to escape alongside the cannula and delay healing, and some pocketing may occur. It was noticed that in spite of the fact that the plug at "B" (Fig. 1) was left out no urine was escaping *via* the cannula. It was thought that either it must have slipped out of the urethra or be blocked, and consequently the animal had to be cast again, and the tube removed. It was found that the cannula was completely blocked by clots which had become hardened. After clearing, the tube was replaced and the wound was restitched. Healing was much slower this time, but urine was passed *via* the cannula, only a small amount issuing from the penis. The plug at "B" (Fig. 1) was now screwed into position so that the animal urinated normally and the wound was left to heal. It was decided to use the artificial vagina when taking semen samples from the animal so that a check could be made on how much semen issued *via* the penis and how much *via* the fistula. To obtain the fistula collection a glass tube was connected to the cannula by means of a short length of rubber tubing in which a small vent had been made to allow excess air to escape "V" (Fig. 3).

FIG. 3.

Fig. 4.

Shows curved arm of cannula issuing from skin. The two marks above are old suture scars.

Fig. 5.

Showing collecting tube in position after collection has been taken.

The bull was led out to the cow and allowed to serve into the artificial vagina. The first two collections so obtained gave a fistula volume of 6·0 c.c. and 6·1 c.c., while only 0·3 c.c. was obtained in the vagina in each case. The quality of the semen was excellent, but both samples were blood-stained. This was not unexpected in view of the fact that the cannula had had to be removed and replaced again.

Repeated collections were made over a period of some weeks, the volume of semen varying between 2 c.c. and 6·5 c.c. *via* the cannula while in no case, after the first two collections, was any semen at all obtained *via* the artificial vagina. Almost all the fistula samples, however, showed some blood cells, the number varying greatly with each collection. The quality of the semen samples continued to be excellent and after collection the plug at "B" was replaced so that urine was passed normally. One of the disadvantages of the "J" tube is the dead space in the curved arm when the plug "B" is in place. This fills up with urine, and may be a source of infection. A slightly different tube has now been designed to overcome this, the seal being at the urethral end of the extension arm.

The animal was slaughtered four months after the introduction of the cannula and a *post-mortem* examination carried out. There was no sign of infection anywhere throughout the urogenital tract and where the cannula had been in contact with the urethra the walls appeared perfectly healthy. The reason for the presence of blood cells in samples was at once obvious. Failure to stitch the urethra above and below the curved arm had resulted in pocketing so that when the usual precopulatory contractions took place the ends of the cannula chafed the edges of the pocket causing slight bleeding (see Fig. 6). Had the urethra been sutured it seems highly probable that no bleeding at all would have occurred during collection. There was also a very slight degree of "furring" on the inside of the cannula. This was of a cellular nature and was easily removed and probably again due to chafing.

Fig. 6.

Showing corroded cannula and pocket formed due to failure to suture the urethra.

Although immediate results obtained by this method appear promising there are many factors to be taken into consideration. These include:—

(*a*) The degree of bacterial contamination occurring in samples obtained in this way.

(*b*) The possibility of the animal developing an ascending infection and cystitis.

(*c*) Granulations may occur in the urethra due to irritation set up by the ends of the cannula.

(*d*) The possible results which may follow removal of the tube if the animal returned to natural service, especially stricture.

(It should be pointed out, however, that if the plug at "B" (Fig. 1) is in place, the bull can serve naturally without removal of the tube and it could be left in position indefinitely.)

(*e*) The difficulty of keeping the inside of the cannula clean and reasonably bacteria free. To clarify all the points will take a considerable time.

In conclusion, it appears that a method of collecting semen is available which will overcome the difficulties encountered with some bulls when using the artificial vagina, but that this method is as yet too experimental for general use. The use of a similar type of tube in the stallion would appear to have great possibilities. The stallion is frequently very difficult to collect from and his use for artificial insemination may be difficult, but with this method he could serve a mare normally and a method be devised for catching the large bulk of semen issuing from the cannula. A larger bore cannula would be necessary to prevent blockage by the gelatinous accessory secretions and to allow for the greater volume of semen.

Acknowledgments.—The writer wishes to thank the Directors of the Mid-Worcester A.I. Centre for permission to carry out this work. Thanks are also due to Mr. N. Douglas who was in charge of the bull throughout the experiment.

Immunity and Premunity in Cattle Trypanosomiasis: I

By

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There has always been some mystery about the nature of resistance to protozoal infections. Whereas in the case of East Coast fever, it is recognized that one attack confers lifelong immunity, in the case of such affections as babesiasis and anaplasmosis resistance is as a rule effective only so long as the infecting parasite is present in the body—that is, tolerance of a co-existing parasite together with resistance to super-infection. More recently it has been recognized that a true immunity is developed in the case of leishmaniasis and this knowledge is used prophylactically in the creation of resistance by means of skin infection. As regards the trypanosomes, Taliaferro demonstrated that immunity occurred in rats following recovery from a natural infection with *T. lewisi* (for a summary of his work *vide* Taliaferro, 1930). The early work, too, of Laveran & Mesnil (1905) and of Laveran (1911 and 1912) in differentiation of trypanosome species presupposed the development of a full immunity.

With the cattle trypanosomes, the condition has been far from clear. The work of van Saceghem (1934, 1936 and 1938) and of Schilling and his collaborators (of which *vide* 1933, 1935, Schilling & Neumann, 1932) has suggested that a true immunity to *T. congolense* may be developed. On the other hand, Hornby (1933, 1941), Hornby & Bailey (1932) and Parkin (1935) produce convincing evidence in favour of premunity.

Recently in the course of work on trypanocidal sera, certain facts have been established which seem worthy of record as throwing some light on the problem, though full details will not be available for publication for some time to come. The subjects of experiment were five cattle which had made a natural recovery from *T. congolense* infection. Attempts were made to re-infect these cattle with the homologous trypanosome and with two strains, which had been proved to be related antigenically but were nevertheless heterologous. In none of the cattle was it possible to reproduce infection with these strains. Trypanosomes were never seen in the blood and injection of blood into white mice failed to reveal that a latent infection existed. The cattle were in appearance normal healthy cattle in very good condition.

Serum was taken from them and was incubated with the test strains of trypanosomes for an hour and the mixture was injected into mice. In no case was it possible to demonstrate by this means the presence of protective properties in the serum.

One further ox, which was believed to have recovered similarly, was also tested in the same way. Injections of the homologous trypanosome failed to infect it, but in this case the serum had marked protective properties for both homologous and allied strains of the parasite. In the course of time, after repeated injections of blood into mice, it was shown that there was still a latent infection and eventually occasional parasites were demonstrated in the blood.

In the case of other animals, which were experimentally infected, serum antibody developed gradually and could be demonstrated with regularity during the chronic stages of the disease, after about six weeks. Work on development and recession of the antibody is to be resumed at an early date, so that for the present further information is not yet available. Meanwhile, the facts seem to give some indication of the solution to the problem. In the first place, therefore, there may be developed either a true immunity or else a premunity; in the second place, immunity may be distinguished from premunity by the absence or presence of serum antibody.

Our knowledge of the bionomics of trypanosomes permits us to account for this phenomenon in a satisfactory manner. Our main source of information is contained in two papers by Ritz (1914 and 1916). This worker produced by subcurative dosage of infected mice as many as 22 relapse variants of *T. brucei* which were antigenically distinct. Ehrlich's work on relapsing parasites, as quoted by Ritz, shows that for each variant an equivalent antibody is produced in the blood serum; there is thus during the course of infection a succession of antigenic forms of the trypanosome succeeded by corresponding antibody. Antigen A is followed by Antibody a, Antigen B by Antibody b, and so on until all variants are exhausted. It is evident that when the capacity to vary on the part of the trypanosome has been exhausted, one of two things may happen. Either the parasite will be eliminated or else where there has been a weakening of the resistance to initial variants it may revert from, say, Antigen X to Antigen A and resume the cycle. In the first case, the result is "immunity" and in the second "premunity."

In a previous communication (Fiennes, 1946) the author considered that serum antibody was a secondary factor in resistance, the end point being the activity of reticulo-endothelial cells. This was in accordance with the views of Laveran & Mesnil (1901) who demonstrated the phagocytosis of *T. lewisi* in the peritoneal fluid of mice after injection into the peritoneal cavity of trypanosomes suspended in immune serum. The present data also support this belief, since it can only be supposed that where serum antibody is absent, the immunity of the recovered animal is vested in the tissues. While it has been demonstrated under the microscope by repeated observation that resistant serum contains a lytic factor, this is not the whole story as is shown by the following experiments:—

In an attempt to absorb trypanosome antibody, sera which showed protective properties were repeatedly "packed" and "incubated" with homologous trypanosomes in very large numbers. The trypanosomes when injected into mice with the serum failed to infect them, but when separated and washed with Ringer glucose they proved fully infective. This is a strong indication that, while a certain proportion of the parasites may undergo lysis when in contact with serum, a proportion survive and when washed dissociate—as would be expected—from the antibody. It indicates further that protection of the mice is due to sensitization of the trypanosomes by some substance, which has the nature of an "opsonin," otherwise dilution of the lysin in the mouse would neutralize its effect. Thus the sensitized trypanosome is quickly eliminated in the body of the mouse by phagocytes, but when desensitized is again fully infective. This is supported by the observations of Laveran & Mesnil (*loc. cit.*) and accords with the views of Mesnil & Brimont (1909), who considered an opsonin to be one of the main factors in protection against trypanosome infection, but were unable in the case of *T. lewisi* to desensitize by washing.

It seems, therefore, that "*immunity*" is vested in the tissues, probably the reticulo-endothelial system, whereas prevention of blood invasion as seen with "*premunity*" may be due at any rate in part to certain humoral factors, of which we have not yet full knowledge. The evidence presented is too scanty to make conclusive claims but it seems worth while to present these facts and speculations, which may give some clue to the final solution. It is probable that the creation of resistance to trypanosome attack combined with drug therapy will play an important part in the reclamation of tsetse fly areas and it is of consequence, therefore, that some knowledge of the factors underlying it should be acquired.

References

FIENNES, R. N. T.-W-. (1946.) "*Trypanosoma congolense*, Broden, Disease of Cattle. The Parenchymatous Lesion and its Relation to the Cellular Defences." *J. comp. Path.* **56.** 28-37.
HORNBY, H. E. (1933.) *Ann. Rept. Dept. Vet. Sci. and Anim. Husb., Tanganyika.* 1932. 24-28.
—— & BAILEY, H. W. (1932.) *Ibid.* 1931. 10-25.
LAVERAN, A. (1911.) "Contribution à l'étude de *Trypanosoma hippicum*, Darling." *Bull. Soc. Path. exot.* **4.** 168-175.
——. (1912.) "Expériences d'immunité croisée avec *Trypanosoma brucei*, *Tr. brucei* var. Werbitzkii, et *Tr. rhodesiense*." *Ibid.* **5.** 1v1-1v.5.
—— & MESNIL, F. (1901.) "Recherches morphologiques et expérimentales sur le trypanosome des rats (*Tr. lewisi*, Kent)." *Ann. Inst. Pasteur.* **15-673.**
——, ——. (1905.) "Sur le Surra et la différenciation des trypanosomiases." *Comp. rend. Acad. Sci.* **140.** 831-836.
MESNIL, F., & BRIMONT, E. (1909.) "Sur les propriétés protectrices du serum des animaux trypanosomiés: Races résistantes a ces sérums." *Ann. Inst. Pasteur.* **23.** 129-154.
RITZ, H. (1914.) "Ueber Rezidive bei experimenteller Trypanosomiasis." *Deutsch. med. Wschr.* **40.** 1355-1358.
——. (1916.) "Ueber Rezidive bei experimenteller Trypanosomiasis II."
SCHILLING, C. (1933.) "The Immunization of Cattle against Trypanosomiasis." *Bull. Soc. Path. exot.* **26.** 1004-1008.
——. (1935.) "Immunization against Trypanosomiasis." *J. Trop. med. (Hyg.).* **36.** 106-108.
—— & NEUMANN, H. (1932.) "The Theory of the Method of the Immunological Differentiation of Trypanosome Strains." *Arch. Schiffs-u. Tropenhyg.* 214-229.
TALIAFERRO, W. H. (1930.) "The Immunology of Parasitic Infections." London.
VAN SACEGHEM, R. (1934.) "The Immunization of Cattle against Trypanosomiasis." *Bull. Soc. Path. exot.* **27.** 170-173.
——. (1936.) "The Immunization of Cattle against Trypanosomiasis." *Bull. agric. Congo Belge.* **27.** 47-50.
——. (1938.) "The Immunization of Bovines against Trypanosomiasis." *Bull. Soc. Path. exot.* **31.** 296-298.

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Immunity and Premunity in Cattle Trypanosomiasis: II

By

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In the preceding communication, evidence was given to show that following infection by *T. congolense* cattle might develop either the premunized or the immunized state, and that the two states could be readily differentiated by presence or absence of serum antibody.

It is now important to consider, further, whether the premunized state is accompanied by a return to full health of the animal and whether the premunized animal is fitted for normal work, breeding or milk production as is the animal that has eliminated the trypanosome. That animals under the stress of adverse circumstances frequently break down to trypanosome infection, especially *T. vivax*, is well known and has sometimes had serious consequences; for instance, the death-rate following immunization of cattle by rinderpest goat virus has in parts of Uganda been as much as 20 per cent., almost entirely due to a flare up of *T. vivax* infection. The problem is thus of considerable consequence.

Parkin (1935) in reference to *T. congolense* infection defines premunity as ". . . a state of tolerance of the parasite with a high red cell count." Bell & Jones (1946) infected 16 cattle with mixed strains of *T. congolense* for work on glucose tolerance in the trypanosome-infected animal. The resulting infection proved very mild and mortality was low. Work on glucose tolerance was carried out in the final stages of the infection, *after the red cell counts had returned to normal*, but when the animals were still carrying trypanosomes. The cattle thus fulfilled Parkin's condition for premunity, yet in every case the authors of this paper find evidence of liver impairment as shown by the organ's capacity to handle glucose. The animals were, therefore, not healthy cattle and Parkin's definition of premunity must be discarded unless it is accepted that premunity is accompanied by an impairment of health.

The same animals were further studied by the writer. Fourteen made what appeared to be a complete recovery. Pooled blood from these was injected into two calves, which failed to develop trypanosomiasis. Attempts were made to re-infect them by means of *Glossina morsitans*, but the trypanosomes were found to have lost the power to infect tsetse fly. They were then injected with mouse blood which contained the infecting strains of trypanosomes. No trypanosome infection developed from this treatment. In the case of the remaining two animals, elimination of the trypanosome was delayed. One showed trypanosomes in the blood for the last time at the 52nd week, but probably remained infected since work was discontinued at the 57th week, when the writer left Uganda; the other animal still showed trypanosomes after 57 weeks. It is therefore, evident that 14 animals became immune, while two were premunized. Were these two animals healthy animals in the sense that they could stand up to full work in a herd?

In the first place, it was possible to detect them in the herd by their "fly struck" appearance. Whereas the recovered animals were in fine condition with glossy, shining coats and the eye bright, the affected two were sunken over the flanks and had the harsh staring coats generally associated with the chronic trypanosome case. Appearances, therefore, indicated that these two cattle were diseased and not healthy animals. Weight curves for the 16 experimental animals are attached and confirm this supposition. They reflect in the clearest possible manner the course of recovery with a subsequent downward trend of the two which became premunized.

While the matter cannot be taken as fully proved, indications are very strong that the premunized animal is still suffering from a chronic disease, sufficient to prevent the attainment of full health. It is very desirable that other workers in this field should record observations on the premunized animal, since the matter is of consequence and can only be settled by the study of a large number of cases.

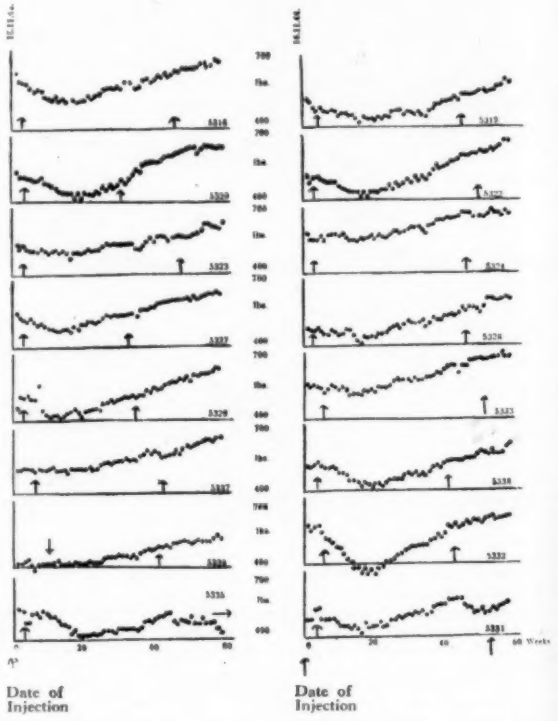

CHART.—Shows weight curves of Adult Cattle infected with *T. congolense*. Arrows show dates at which blood showed presence of parasites for first and last time.

References

BELL, F. R., & JONES, E. R. (1946.) *Ann. Trop. Med. & Parasit.* **40.** 199-208.
PARKIN, B. S. (1935.) *Onderstepoort J.* **4.** 251.

Weekly Wisdom

"*Experimental science has three great prerogatives over other sciences: it verifies conclusions by direct experiment; it discovers truth which they never otherwise would reach; it investigates the course of nature and opens to us a knowledge of the past and of the future.*"—ROGER BACON (13th century).

THE VETERINARY RECORD

June 14th, 1947

A LAMENTABLE IMPASSE

A SUPPLEMENT to *The Veterinary Record* published at the end of January last gave a brief factual analysis of the negotiations relative to the status and emoluments of the veterinary personnel of the Ministry of Agriculture. There is no need, therefore, to re-state all the facts and figures. It seems desirable, however, to mention once again the outstanding features of the position which has developed.

It is now over ten years since the N.V.M.A., appreciating the injury which the Ministry's salary scale was doing to the interests of the veterinary medical profession, took up the issue and secured an official admission that the scale had been under consideration for some years, as it was not "proving attractive to the best recruits."

Not unnaturally, there was general anticipation that when Local Authority veterinary staffs were centralized under Whitehall, the opportunity would be seized to redress existing grievances, but the new (1938) scale showed an average increase of only £20 per annum. In spite of the dissatisfaction which was then aroused, it was ordained that any further revision must await the end of the War.

It was in September, 1946, that the N.V.M.A. was handed a revised scale of salaries which the Ministry had decided to impose, with retrospective effect from January 1st. There was a wide gap between the new rates and those proposed to the Ministry by the Association in December, 1945.

The new scale simply perpetuates a running sore for reasons which can be stated quite simply. The young veterinary medical graduate who contemplates a career in preventive medicine will be well advised to devote two or three years to general practice before he joins the Civil Service. If he joins the Service at the age of 25, the initial basic salary of £420, plus bonus and assured annual increments, may appear to him superficially attractive. Once he commits himself to a career in the State service, he will find it progressively more difficult to change his mind and return to private practice.

He will be 42 years old by the time he attains the maximum stipend of a V.I.—£840 per annum—and he will probably have discovered that most of his bonus payments have been swallowed up by the cost to him of having to remain completely mobile (so that he can move to wheresoever he is directed) and by inadequate allowances for car mileage and subsistence.

If our V.I. plods his weary way to higher salary grades, his promotion will have brought him a salary of £1,050 after 25 years' service and by the time he is 54 he will have attained the munificent figure of £1,300 per annum. If by then he has any prospect of stepping into the shoes of the D.C.V.O. (£1,700) and, later, of the C.V.O. (£2,000), he will know that the attainment of the maximum salary grade will virtually coincide with the eve of his retirement from the Service on superannuation.

It is only necessary to set out these figures to explain the discontent which is rife amongst the professional members of the staff of the Ministry's Animal Health Division and to explain why the N.V.M.A. is bound to warn its members that the rewards of a Civil Service career can have no attraction for the zealous young veterinarian who is sincerely desirous of playing a worthy part in the great battle for animal welfare.

We earnestly hope that the Ministry will speedily take steps to remove an impasse which is of their own creation. For our part, we are content to forget the Department's unhappy methods of showing its resentment of the Association's fight for its members' status, and in all sincerity we suggest that it would be lamentable if nothing could be done to remove the impasse until the Ministry is convinced that inadequate salaries explain the dearth of applicants for Ministry appointments. Surely the best recruits are still wanted.

LAMENESS IN CATTLE ASSOCIATED WITH GANGRENE

An Ergot Poisoning Suggestion from New Zealand

In our issue of February 1st we reproduced the clinical report communicated to the North Wales Veterinary Association by Mr. H. Llewelyn Jones, of Denbigh, in which the majority of cows in a small herd at pasture rapidly fell lame with acute dermatitis and cellulitis. The bacteriological report revealed a great variety of organisms, including anaerobes and some resembling the bacillus of necrosis, while the presence of *Cl. welchii* toxin in the tissues was confirmed biologically. Nevertheless, the cause of the lameness remained undetermined, and we are glad to have the opportunity of publishing the following letter received from New Zealand by Mr. Llewelyn Jones.

"C/o Veterinary Service,"
Opunaki,
Taranaki,
New Zealand.
May 12th, 1947.

H. Llewelyn Jones, Esq., M.R.C.V.S.

Dear Sir,

I was very interested in your communication in *The Veterinary Record* for February 1st, 1947, on lameness of undetermined cause associated with gangrene.

The history, symptoms and signs are typical of ergot poisoning, a common condition on the Hauraki Plains of New Zealand, the last place I was working at.

This ergot grows on the seed heads of a grass called Fescue (not the Fescue growing in Great Britain—a much coarser Fescue). Another species of ergot grows on the seed heads of rye grass, but this species does not cause gangrene of the extremities.

You mentioned in your case report the pasturing of the affected cows on seeded rye grass, but the presence of ergot containing vaso-constrictor toxin would be necessary to substantiate the diagnosis. However, unless you meet with another case early next winter (at which time, incidentally, the majority of cases naturally occur), it will not be possible to verify the diagnosis of ergot poisoning.

Yours faithfully,
Peter M. Flodin, M.R.C.V.S.

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WORLD SCARCITY OF GRAIN

Sir John Boyd Orr, Director-General of the United Nations Food and Agriculture Organization, recently (says Reuter) announced that a special cereals conference to discuss the world grain scarcity would be opened in Paris on July 9th. Invitations have been sent to all F.A.O. member nations and to the United Nations, the Economic Commission For Europe and the International Wheat Council. The conference is to consider measures the nations may take to ease the severe effects of the world scarcity of grain expected in 1947-48, and it is being convened in accordance with a resolution of the International Emergency Food Council in May. The F.A.O. defined the aim of the conference as "to formulate recommendations for Governments on the ways and means of making the largest possible collections of their own grain output for human consumption and managing rations throughout the year so as to avoid the distress caused in the past two years by extreme shortages in the spring months before the new crops are harvested."

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"Cold Storage Operation" is the title of a 72-page instructional monograph descriptive of the operations and methods of up-to-date cold storage practice. It is the first of a short series of educational monographs published on behalf of the Institute of Refrigeration and dealing with different aspects of refrigeration. Priced at 7s. 6d., these monographs are especially intended for all those who study up-to-date methods and equipment in cold stores. Copies of "Cold Storage Operation" can be obtained from "Modern Refrigeration," Empire House, St. Martin's-le-Grand, London, E.C.1.

CLINICAL COMMUNICATION

Double Rupture of the Uterus in a Bitch

CHRISTINE A. WOODS, M.R.C.V.S.
AND
MARY DALBY, B.V.SC., M.R.C.V.S.
MENSTON-IN-WHARFEDALE

Subject.—Corgi x terrier type bitch, primiparous, 18 months old.

History.—The bitch had been accidentally mated by her sire at her second heat and was in perfect health until a day or two before full term. On 29.3.47 she had been noticed by her owner to be off colour and her condition deteriorated until she was brought to the surgery on 1.4.47. Her general condition was very poor and no labour pains were shown although 18 hours previously a water-bag of dark green fluid had appeared and was still present at the vulva. On vaginal examination the os was open but no foetus could be palpated except through the uterine wall; 1 c.c. pituitrin produced no result. The abdomen was abnormally distended and a tentative diagnosis of rupture of the uterus was made. In view of the attitude of the owners, the bitch's very poor condition and the remote chance of successful operation, the bitch was destroyed.

Post-mortem *Examination.*—On opening the abdomen a large quantity of blood-stained fluid rushed out and on enlarging the opening six foetuses were found to be free in the peritoneal cavity. The uterus had a large rupture at the anterior end of each horn and was practically empty and much less than normal full-term size. Besides the ruptured areas there was a number of very thin patches disposed roughly in zones round the horns at intervals but not necessarily corresponding with areas of placentation. It was apparently one of these areas at the tip of each horn that had ruptured. Of the six foetuses, three were full term and of these, two were still living and had to be destroyed separately. The remaining three were approximately eight weeks developed and showed slight purplish discoloration in the perineal region. There was no sign of life in them. We are indebted to Dr. Davies and Mr. Jennings of Liverpool University who examined the uterus and sections made from it and reported that no abnormality was detectable in the uterine wall which would account for the rupture. The only changes present were in the tissue bordering on the ruptures and consisted of haemorrhage and early granulation tissue formation, suggesting that the ruptures had occurred some days previous to the death of the bitch.

Discussion. The evidence suggests that the rupture probably took place some days before the bitch was presented for examination and that the three immature foetuses slipped at the time of rupture into the abdominal cavity, either complete with their placentae or twisting their umbilical cords, thus suspending growth, whereas the other three remained in such positions that normal development continued until full term. Unfortunately the relief of intra-abdominal pressure caused such gross displacement of the foetuses when the abdomen was opened that it was impossible to decide how they had been lying. We have no clue, however, as to why the weakened areas of the uterus developed in the first place in a bitch apparently healthy in every way and with no previous history of illness, abnormality or accident.

Reports on the condition of cattle are variable; store stock, especially those out-wintered, are generally in poor condition as a result of the severe winter and the difficulties over fodder supplies. Dairy cattle have come through the winter fairly well. The fall of lambs among lowland flocks is reported to be rather above average, but losses of both ewes and lambs have been considerably heavier than usual. Hill ewes which survived the severe winter were in poor condition when lambing began: further losses were still being reported at the end of April, and with the ewes short of milk the number of lambs reared will be much below normal. —*Meat Trades Journal.*

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given two injections of tetanus toxoid combined with tapioca, at an interval of 30 days. The resulting local oedema resolved in 24 to 48 hours, and the animals appeared to suffer no other ill-effects, apart from one case of local abscess, which healed in five days.

The duration of the active immunity induced has not yet been determined.

I. W. J.

ABSTRACTS

[**Infertility of Cows on Upland Grazings.** Dunlop, G. (1947.) *Agriculture.* **53**. 532.]

The author records a very practical experiment carried out on hill grazings in Central Scotland between 500 and 2,000 feet above sea level, the object being to improve the fertility of cattle in these areas. These were Highland-Shorthorn crosses and of the pure Highland breed. There was approximately one animal to 30 to 40 acres. The following mixture was fed to the cattle in open porcelain troughs:—

Feeding bone flour	50 parts
Carbonate of lime	15 parts
Common salt	32 parts
Iron salts	2½ parts
Trace elements (Co, Cu, I, Mn) ...	½ part

Constant filling was necessary during the first month of the experiment which commenced the first week in June and during this time an average of two pounds of mineral was consumed per animal per day. Subsequently, however, it was only necessary to refill the troughs once before the end of the year.

Improvement in the clinical condition of breeding cows in the mineral fed group was marked as compared with that observed in the control group. In the latter symptoms of phosphorus deficiency were also present. Further, in the treated group, the average of the calf weights at birth was significantly increased as compared with previous years and these calves were considered to be more forward when a month old; in fact they compared favourably with those born on better grazing in other parts of the country. The general fertility rate was also better.

Chemical analysis of hill herbage collected in mid-July, revealed that only 0·38 per cent. P_2O_5 was present, which resembled closely the figure recorded by Theiler for samples taken from the phosphorus deficient veldt in South Africa. Assuming an intake of 30 lb. of dry matter per day, during the breeding season, this would mean an intake of 50 gm. of P_2O_5 which is regarded as far too low for a recently calved cow.

N. S. B.

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[**Canker of the Foot of the Horse: A Note on Treatment.** Mason, J. H. (1946.) *J. S. Afr. vet. med. Ass.* **17**. 166-168.]

In a short article Mason describes the results he has obtained in the treatment of 20 cases of canker occurring amongst serum horses.

He is of the opinion that the temperament of the horse does not lead to a proneness to the disease, and that the most important predisposing factor is inefficient management.

After trying the many types of treatment advocated for canker, he has come to the conclusion that caustics, powerful astringents, and protein precipitants are definitely contra-indicated, and that minor surgery plus cleanliness and the application of a bland paste will give the best results.

His form of treatment consists of (*a*) an initial treatment of cleaning and disinfection, by means of the cautious use of the knife and the application of acriflavine (1:1,000). The antiseptic is applied on cotton wool, which is packed tightly and held in position by means of hessian and a leather covering; (*b*) after a considerable portion of the diseased horn has been removed, and the healthy horn pared to the quick, a firm paste, zinc oxide (two parts), kaolin (two parts), boric acid (two parts) and glycerine is applied.

In average cases improvement occurs in a fortnight.

In conclusion, Mason lists various other drugs and combinations of drugs he has employed at various times, but is of the opinion that the method he has described will prove the most successful in the majority of cases.

G. C. B.

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[**Vaccination Antitétanique du jeune Poulain.** Lemetayer, E., Nicot, L., Guillot, L.-P., Jacob, L., Girard, O., et Corvazier, R. (1946.) *Bull. Acad. vét. France.* **19**. 282-284.]

It has been shown previously that foals of six months and over may be immunized successfully with tetanus toxoid, in the full adult doses. It has also been found that the offspring of well immunized mares possess a good passive immunity for from 30 to 50 days after birth. This latter immunity, however, is almost completely gone by the time the foal is three months old.

The authors have now found that foals, from the age of six weeks onwards, may be vaccinated exactly as for adult animals, and that the resulting active immunity is just as good as that obtained in the adult. The 17 foals used in the experiment were

REVIEW

["**Diagnostic Methods in Veterinary Medicine**" (2nd Edition). Geo. F. Boddie, B.Sc. (Edin.), M.R.C.V.S. pp. 357. Oliver & Boyd, Ltd., Edin. 15s.]

We welcome the second edition of this work, particularly as it appears to be the only British book dealing with diagnostic methods applicable to farm animals. Excellent as the work is, we would have been glad to see it extended considerably in scope and size. For instance, the subject of pregnancy merits much more space than the meagre 20 lines now devoted to it. Even though the chapter on clinical bacteriology has been extended, it is still not by any means complete; spirochaetes are not even mentioned! The coloured plates are excellent.

Although it is generally agreed that testing for tuberculosis in the dog and cat is rather unsatisfactory, it would have been to the reader's advantage if some advice had been tendered as to which is the best method to adopt in these animals.

As its title indicates, the book is a compilation of diagnostic *methods*, and as such it is fairly comprehensive. No doubt by design, the author has not made a strong point of differential diagnosis; so that any reader who contemplates obtaining aid in distinguishing between—let us say, for example—feline enteritis and feline distemper, or the differential diagnosis of ascites from other abdominal distensions, will be disappointed. In point of fact, the former disease is not mentioned, and distemper of either dog or cat is only very briefly alluded to in nine different places.

Adequate description has been given of the patellar and other reflexes, but the reader is given practically no idea of the significance of the various reactions. Without some indication as to what may be inferred from such tests, it would seem of little value to perform them, or even describe them.

These criticisms are not intended to be destructive, but rather indications to the author as to how he might improve the next edition; and it is sincerely hoped that no aspect or detail of diagnosis in the large animals will be omitted therefrom. It is also hoped that differential diagnosis will be introduced as an important feature, especially as the author (in his preface) states that the work is intended for students and teachers no less than for graduates.

The text is clear and concise and is written in a facile style; but we venture to think that improvement would be effected by replacing the seven "drawings from radiographs" by actual radiographs. No drawing, however well executed, can approach in detail and in variations of shadow, the actual radiograph. The two can hardly be compared.

The type is clear and legible; the paper of very good quality and the width of margins surprisingly liberal in view of the severe restrictions imposed upon the printing trade.

The publishers are to be congratulated, and we shall watch the progress of this work with interest.

REPORT

[**Department of Agriculture, Canada:** Report of the Veterinary Director-General (M. Barker, V.S.) for the year ending March 31st, 1946.]

In general the health of Canadian livestock was good; no outbreak of any serious disease occurred during the year. Shortage of Veterinary Inspectors continued seriously to limit the work of the Division, more particularly in connection with the control and eradication of tuberculosis.

Contagious Diseases Section

Brucellosis.—There were 2,715 herds under the supervision of the Division for the control of Bang's disease. Of this number 1,838 were listed as free from the disease.

Tuberculosis.—Statistical tables show in detail the numbers of cattle tested under the different control policies. Only 0·15 per cent. reactors were discovered amongst 302,755 cattle tested under the "Accredited Herd Plan," whilst 0·58 per cent. reacted out of 433,300 cattle examined under "Area Testing."

Hog Cholera was less prevalent than during the previous year.

Scrapie, which appeared in a flock of sheep in the province of Ontario, was dealt with by slaughter and compensation and no further cases were confirmed.

Dourine, Glanders, Anthrax and Sheep Scab appeared to have been successfully eradicated. *Rabies* was still causing some concern in part of Ontario but the rest of the country was free.

Meat and Canned Foods Section. This section forms no small part of the Department's activities and provides interesting statistical information.

S. A. E.

Questions and Answers

The submission of questions for inclusion in this column will be welcomed: they can relate to any aspect of veterinary work. For purposes of record, each question is numbered, and those submitting questions are required to furnish (not for publication) name and address.

Answers to readers' queries represent exclusively the personal opinions of the writers, and criticism of the replies will be appreciated.

All communications should be addressed to the Editor.

Bracken Poisoning Diagnosis

Q. CCVI.—*How should one diagnose bracken poisoning on post-mortem examination, as other cases show almost exactly similar haemorrhages? Is it possible to find the poison by chemical analysis?*

A.—Fletcher[1] divides cases of bracken poisoning into enteric and laryngeal types. In the latter symptoms may not be characteristic nor in some cases of the former, but it seems to the writer that haemorrhages in the enteric type are so widely distributed throughout the carcase as to be diagnostic. Quite clearly also the history of the case will be invaluable in reaching a conclusion. Though small quantities of HCN are present in young bracken shoots, this seems to do little harm. The chief poison incriminated by some workers is a catechol tannin[2] but others favour a phytotoxin. There is no reliable chemical test which can be applied to gut contents or organs to help to confirm the diagnosis. Though tannic acid could be detected, it may be present in the bowel of normal animals.

[1] Fletcher, J. M. *Vet. Rec.* **56.** 478.
[2] Shearer, G. D. *J. comp. Path.* **55.** 290.

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Pre-parturient Vaginal Prolapse

Q. CCVII. *Many ewes have been showing slight vaginal prolapse, some a fortnight before and some immediately prior to lambing. When due to lamb the* os *does not dilate, but the water-bag is pressed backwards in a fold of the vagina above the* os *uteri. Very few of the ewes lamb successfully. I have tried pituitrin with varied results. Can you please suggest a cause, prevention and treatment if any?*

A.—The condition described in the above question seems to have been fairly widespread during the current lambing season. It is probable that no single cause can be assigned to the majority of cases. In the present writer's experience, these cases are far more common in severe seasons, such as those of 1940 and 1947; it is probable, therefore, that a low nutritional plane is a major factor, coupled with the lack of exercise enforced by snowy conditions. It is therefore suggested that as high a standard of feeding as possible be maintained, and that the hay be not fed in one place, but scattered over the field in lines, so that the ewes have to walk and even struggle through the snow to get it. (It may be remarked in passing that if this plan is adopted, there will be many fewer cases of toxaemia of pregnancy.)

The condition also occurs in ewes suffering from abortion due to *Salmonella abortivo-ovinus*, or, less commonly, to *Vibrio foetus*. If the number of cases is such as to suggest the probability of a common cause, the help of a bacteriologist should be sought. Individual cases can only be treated by the cleansing and replacement of the part extruding, and its retention in place by means of a West's vulva clam, tape sutures, or safety-pins with a figure-of-eight tape behind them. If the ewe is watched carefully by a skilled shepherd, and the clam removed at the commencement of lambing only, and replaced immediately after lambing, the majority of cases should recover.

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De-horning of Young Calves

Q. CCVIII.—*This is becoming a more widespread practice. Some time ago a method of dehorning, using a hollowed-out electric soldering iron, was described in the veterinary and/or farming press. The writer would appreciate any information concerning the type of instrument and the technique of using it that may be available, as he considers the caustic method to be messy and in many ways undesirable.*

A.—Apparently the actual cautery has been very little used in this country for dehorning of young calves. In America, however, large numbers of calves are dehorned by this method, using either an iron heated in the fire, or one electrically heated. In both cases, the instrument is similar, consisting of a steel rod, with a head approximately one and a quarter inches in diameter, the outer part of the head being left intact to form a ring about a quarter of an inch wide, but the centre and inner part, about three quarters of an inch wide, hollowed out, and a hole bored through this to the opposite end of the iron to permit any steam

or gas passing upwards while the iron is applied over the horn-bud. The iron should not be used at full red heat. Anaesthesia may be induced either by local infiltration round the buds or by a sub-zygomatic nerve block.

While the electrically heated iron is probably more satisfactory in many ways, the fact that only a minority of farms yet have electricity supplies suggests that one designed for heating in a fire would be of more general use.

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CORRESPONDENCE

Q. CCV.—Terms of Partnership

Sir,—As one who has suffered through the instrumentation of a defective partnership agreement, even though it was drawn up by a solicitor, I should like to lay particular emphasis on one part of your answer. That is, the most vitally important clause in a partnership agreement is that dealing with the terms of dissolution. Pessimistic possibly, but better so than eternally regretful!

Yours faithfully,
"X."

QUESTIONS IN PARLIAMENT

FOOD SUPPLIES: HORSEFLESH

Sir R. GLYN asked the Minister of Food (1) what are the regulations of his Department concerning the slaughter of horses and ponies for human consumption; what shops are permitted to retail horseflesh; and how many of these animals are being slaughtered on the average each month; (2) whether he accepts responsibility for the examination of horses and ponies prior to slaughter if the carcases are to be sold for human food; what are the arrangements made for collecting these animals and consigning them by road or rail to approved slaughterhouses; whether his Department has licensed these premises specially; and what is the total number throughout the country.

Mr. STRACHEY: I have made no regulations about the slaughter of horses and ponies for human food, their examination before slaughter, or the licensing of premises where they are killed. Under the Food and Drugs Act, 1938, however, all slaughterhouses must be licensed by the local authorities. Shops which sell horseflesh for human consumption must be licensed by my Department, and may not sell horseflesh unfit for human consumption, or any other meat. Slaughterers make their own arrangements for collection and transport. I do not know the number of slaughterhouses used, as they are not specially licensed for this purpose, nor the average number of horses slaughtered.

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KNACKERS (LICENSING)

Sir R. GLYN asked the Minister of Health whether the responsibility for licensing knackers for the humane slaughter of horses and ponies no longer fit for work rests with local authorities; whether such licences permit of the disposal of the flesh for human food; and what steps are taken to inspect the premises and pass the meat as fit to eat.

Mr. BEVAN: Yes, Sir, local authorities are responsible for both licensing and inspection. No part of an animal slaughtered in a knacker's yard may be sold for human consumption.

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WATER SUPPLY (APPROVED SCHEMES)

Mr. HEATHCOAT AMORY asked the Minister of Health what steps are being taken to speed up the carrying out of water supply schemes already approved; and where progress is hampered by lack of materials, what is being done to increase supplies.

THE MINISTER OF HEALTH (Mr. ANEURIN BEVAN): Every effort is being made by the Government to increase the overall supply of essential materials upon which the progress of water schemes depends, but the position is such that progress must for the time being be confined to those schemes or parts of schemes which are vitally urgent.

Mr. AMORY: Will the right hon. Gentleman make sure that a generous allocation of the supplies available will be granted to water schemes in rural areas?

Mr. BEVAN: Water schemes in rural areas have priority for the supply of available material, but we really are dreadfully short of iron and steel for these schemes. Schemes already approved this year will not be carried out unless we can have additional allocations.

NOTES AND NEWS

Diary of Events

June 17th.—Annual Meeting of the Research Defence Society at Manson House, Royal Society of Tropical Medicine and Hygiene, 26, Portland Place, W.1, at 3.15 p.m. (Stephen Paget Memorial Lecture—Prof. G. H. Wooldridge: "What Animals Owe to Experimental Research.")

June 18th and 19th.—N.V.M.A. Committee Meetings, 36, Gordon Square, W.C.1.

June 19th.—Meeting of the Western Counties Division, N.V.M.A., at Dartington Hall, Totnes, 2 p.m.

June 20th.—N.V.M.A. **Council Meeting,** at the Connaught Rooms, Great Queen Street, Kingsway, W.C.2.

June 23rd—28th.—Joint Summer Meeting of the British Grassland Society and British Society of Animal Production, at Aberystwyth. (Papers, Demonstrations and Visits to Stations and Farms).

June 25th.—Meeting of the South-Eastern Division, N.V.M.A., at Frant, Nr. Tunbridge Wells (The Wellcome Veterinary Research Station), 11 a.m.

June 25th.—Meeting of the Scottish Metropolitan Division, N.V.M.A., at Galashiels (Royal Hotel), 2.30 p.m.

June 26th and 27th.—R.C.V.S. Written Examinations.

July 28th—Aug. 1st.—N.V.M.A. Annual Congress in Edinburgh

July 31st.—12th Annual Meeting of the Royal (Dick) Veterinary College Alumnus Association, at the Royal British Hotel, Princes Street, 7 p.m.

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Ministry of Agriculture—Veterinary Appointments

The following Resolution was passed at a General Meeting of the Sussex Division, held on May 30th:—

> "That the Sussex Division of the N.V.M.A. regrets the decision of Council N.V.M.A. to compromise with the Minister of Agriculture, but will loyally support Council in any action which they deem expedient to improve the status and salaries of the members of the permanent staff of the Animal Health Division of the Ministry of Agriculture and Fisheries."

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N.V.M.A. Congress, Edinburgh

A few rooms, mainly double- and twin-bedded, are still available to the Provisional Committee in various hotels in Edinburgh. Anyone who has difficulty in obtaining accommodation is advised to make early application to the Local Secretary, Professor A. Robertson, Royal (Dick) Veterinary College, Edinburgh, 9.

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PERSONAL

Appointment.—Mr. J. A. Milton, B.SC. (AGRIC.) (ABER.), M.R.C.V.S., has been appointed Agricultural Adviser to the British Oil & Cake Mills (Scottish Branches). After graduating from Aberdeen University and the Royal (Dick) Veterinary College, Edinburgh, Mr. Milton, who is a Scottish farmer's son, undertook a further year's post-graduate study in animal nutrition at the Rowett Research Institute. In 1935 he was appointed Instructor in Veterinary Hygiene to the Glamorgan Agricultural Committee and six years later was seconded to the W.A.E.C. as Livestock and Feeding-Stuffs Officer. He has since been in general practice.

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Birth.—SHERIFF.—On April 30th, 1947 at Lusaka Hospital, N. Rhodesia, to Sheila, née Whitehead, wife of Duncan Sheriff, M.R.C.V.S., a son, James Andrew.

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MR. NAIRN AND MR. WILLETT: PROGRESS IN HOSPITAL

In recent issues we have had to record, with much regret, the serious illnesses of Mr. William Nairn and Mr. Jack Willett. From Blairgowrie Hospital comes the welcome, reassuring news that Mr. Nairn is making satisfactory progress after his serious abdominal operation and that it is definitely believed that he has "turned the corner." From Mr. Willett, in St. Mary's, Paddington, we learn

with relief that there is no joint involvement in the femoral fracture he sustained in London on May 16th. He, too, is progressing well, after an accident upon which he is the more to be commiserated in that he had not long recovered from an attack of pneumonia which incapacitated him for two months.

We are glad to learn, also, that Professor C. Formston, of the Royal Veterinary College, has made a good recovery from his attack of pneumonia and hopes to resume his duties fairly soon.

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ADDRESSES OF DISEASE-INFECTED PREMISES

Outbreaks of Foot-and-Mouth Disease

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Foot-and-Mouth Disease:

Glamorgan.—Llanblethian House, Cowbridge; Old Picton, Llanblethian, Cowbridge, Glamorgan (June 3rd); "Verlands," Cowbridge, Glamorgan (June 4th).

Herefordshire.—Swan Meadow, Aylestone Hill, Hereford (June 5th).

Worcestershire.—Deans Orchard, Post Office Lane, Kempsey, Worcester; Old Hunt Stables Farm, Croome, Worcester (June 5th).

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TUBERCULOSIS (ATTESTED HERDS) SCHEME

Statement Showing Position of "Attested Herds" in each County as at March 31st, 1947

The figures in the statement as to the approximate number of attested cattle on March 31st, 1947, show an appreciable increase over the corresponding figures in earlier statements. These were known to have been on the low side and have now been revised on the basis of the latest information available.

The 26,839 attested herds in Great Britain on March 31st, 1947, include 11,594 herds which are also licensed for the production of tuberculin tested milk. In addition there are 4,753 T.T. herds which are not attested, comprising about 234,000 cattle.

County	Total Cattle as on 4.6.46	Number of Attested Herds as at 31.3.47	Approximate Number of Attested Cattle as at 31.3.47	Percentage of Attested Cattle to Total Cattle
ENGLAND				
Bedford	45,188	45	3,016	6·7
Berks	77,038	286	17,059	22·1
Buckingham	105,013	138	9,470	9·0
Cambridge	29,719	56	3,476	11·7
Isle of Ely	19,663	7	385	2·0
Chester	239,903	199	12,733	5·3
Cornwall	250,587	193	7,944	3·2
Cumberland	213,617	624	32,260	15·1
Derby	186,037	56	3,686	2·0
Devon	368,773	355	16,286	4·4
Dorset	133,763	298	19,200	14·4
Durham	115,670	190	9,193	7·9
Essex	121,200	266	17,352	14·3
Gloucester	175,009	207	13,315	7·6
Hampshire	137,644	313	19,147	13·9
Isle of Wight	20,158	22	1,309	6·5
Hereford	123,462	152	9,274	7·5
Hertford	57,175	138	10,974	19·2
Huntingdon	28,263	12	1,273	4·5
Kent	114,471	229	12,949	11·3
Lancaster	279,950	217	11,741	4·2
Leicester	156,021	83	5,439	3·5
Lincoln (Holland)	27,195	—	—	—
Lincoln (Kesteven)	67,879	9	511	0·8
Lincoln (Lindsey)	158,766	24	1,437	0·9
London	129	—	—	—
Middlesex	7,397	12	938	12·7
Norfolk	165,625	167	13,730	8·3
Northampton	143,107	49	3,646	2·5
Soke of Peterborough	7,097	—	—	—
Northumberland	191,772	173	10,368	5·4
Nottingham	109,804	51	3,036	2·8
Oxford	96,317	250	14,817	15·4
Rutland	20,254	6	472	2·3
Salop	260,860	239	15,772	6·0
Somerset	298,943	450	26,749	8·9
Stafford	230,960	70	3,777	1·6
Suffolk, East	76,730	68	4,652	6·1
Suffolk, West	34,974	65	5,341	15·3
Surrey	48,524	207	11,481	23·7
Sussex, East	98,829	169	9,476	9·6
Sussex, West	67,009	149	8,579	12·8
Warwick	143,744	116	7,872	5·5
Westmorland	90,991	458	22,895	25·2
Wilts	176,530	207	15,915	9·0
Worcester	91,928	81	5,421	5·9
Yorks, East Riding	125,525	20	806	0·6
Yorks, North Riding	236,952	359	13,385	5·6
Yorks, West Riding	339,587	278	13,998	4·1
Total, England	6,315,821	7,743	452,495	7·2
Wales				
Anglesey	55,897	22	1,013	1·8
Brecon	44,833	149	5,084	11·3
Caernarvon	61,199	108	4,203	6·9
Cardigan	72,990	3,159	49,878	68·3
Carmarthen	130,805	3,699	77,123	59·0
Denbigh	97,804	352	9,650	9·9
Flint	58,379	46	2,615	4·5
Glamorgan	74,208	130	3,993	5·4
Merioneth	41,418	798	15,723	38·0
Monmouth	64,437	104	5,010	7·8
Montgomery	92,191	327	11,769	12·8
Pembroke	98,135	1,530	33,201	33·8
Radnor	35,397	41	1,059	3·0
Total, Wales	927,693	10,465	220,321	23·7
Total, England and Wales	7,243,514	18,208	672,816	9·3
Scotland				
Aberdeen	204,491	91	8,633	4·2
Angus	56,952	68	6,971	12·2
Argyll	60,768	350	13,248	21·8
Ayr	142,911	1,795	110,481	77·3
Banff	50,737	20	1,638	3·2
Berwick	30,348	25	1,682	5·5
Bute	10,462	324	8,577	82·0
Caithness	24,574	133	1,903	7·7
Clackmannan	4,379	20	1,361	31·1
Dumfries	97,008	941	54,138	55·8
Dunbarton	16,438	131	7,683	46·7
East Lothian	14,364	18	1,811	12·6
Fife	57,318	141	11,117	19·4
Inverness	51,629	37	2,348	4·5
Kincardine	33,405	25	2,333	7·0
Kinross	7,779	28	1,674	21·5
Kirkcudbright	71,224	520	38,843	54·5
Lanark	91,239	875	50,558	55·4
Midlothian	28,403	101	5,729	24·5
Moray	27,954	33	2,850	10·2
Nairn	7,888	12	813	10·3
Orkney	43,927	153	3,512	8·0
Peebles	10,633	95	4,802	45·2
Perth	83,782	125	8,160	9·7
Renfrew	31,041	229	13,740	44·3
Ross-shire	38,110	24	1,219	3·2
Roxburgh	32,350	28	1,727	5·3
Selkirk	5,954	19	707	11·9
Stirling	40,319	227	13,096	32·5
Sutherland	9,948	7	265	2·7
West Lothian	14,196	70	3,795	26·7
Wigtown	68,143	349	29,899	43·9
Zetland	8,339	1,617	6,652	79·8
Total, Scotland	1,472,013	8,631	421,965	28·7
Total, Great Britain	8,715,527	26,839	1,094,781	12·6

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RESTRICTIONS ON SLAUGHTERING

The Minister of Food has made an Order, the Livestock (Restriction on Slaughtering) Order, 1947, which came into force on June 8th, making certain changes in the regulations applying to the slaughter of livestock (*i.e.*, cattle, calves, sheep and pigs), where such slaughter is immediately necessary or desirable because of illness of, or accidental injury to, the animal. The period within which the owner of any livestock, which has been slaughtered in such circumstances must notify the District Chairman of Auctioneers at the nearest Collecting Centre, is reduced from 48 hours to 24 hours, exclusive of Sunday or a public holiday. The Order also provides that as an alternative to notifying the District Chairman of Auctioneers the owner may deliver the carcase within 24 hours of slaughter to the Government slaughterhouse nearest to the place of slaughter between the hours of 8 a.m. and 4 p.m. on Mondays to Fridays inclusive and 8 a.m. and 1 p.m. on Saturdays. The manager of a Government slaughterhouse may refuse to accept delivery of any carcase which in his opinion is not fit for human consumption.

The Order makes it an offence to buy, for the purpose of trade in meat for human consumption, any meat, whether derived from livestock slaughtered in Great Britain or imported, except from the Minister or from a person selling on his behalf. Similarly, it is an offence to sell or expose for sale any meat, whether imported or derived from home-killed livestock, unless the meat has been purchased from the Minister or his agent.

The previous Order provided that meat which was not fit for human consumption should be impregnated with a colouring agent as prescribed in the Order by immersing it in the solution or by spraying. The new Order requires that all such meat shall be treated with the prescribed colouring agent by immersing it in the solution or by spraying or otherwise applying the solution so that the whole surface of the meat is covered.

SCHEME FOR THE CONTROL OF DISEASES OF DAIRY CATTLE

STATEMENT SHOWING THE NUMBER OF UNDERTAKINGS NOTIFIED TO THE MINISTRY OF AGRICULTURE DURING THE MONTH ENDED MAY 31ST, 1947

County	Undertakings Notified	Total Undertakings		
	During month	Previously	Number	Number of Cattle: Cows	Number of Cattle: Heifers
ENGLAND					
Bedford	1	9	10	194	126
Berks	—	46	46	1,447	984
Bucks	—	35	35	925	959
Cambridge	—	—	—	—	—
Cheshire	4	134	138	4,690	1,853
Cornwall	—	—	—	—	—
Cumberland	3	6	9	387	304
Derby	—	223	223	6,365	3,678
Devon	3	139	142	1,976	1,348
Dorset	—	12	12	378	149
Durham	1	163	164	3,482	1,458
Essex	1	104	105	3,691	2,731
Gloucester	—	32	32	1,074	901
Hampshire	2	179	181	5,809	3,820
Hereford	—	5	5	163	137
Hertford	1	28	29	902	586
Hunts	—	—	—	—	—
Isle of Ely	—	—	—	—	—
Isle of Wight	—	—	—	—	—
Kent	1	69	73	1,621	1,144
Lancs	—	87	87	2,659	1,079
Leics	—	62	62	1,609	1,314
Lincs (Holland)	—	—	—	—	—
Lincs (Kesteven)	—	13	13	166	141
Lincs (Lindsey)	—	14	14	419	425
Middlesex	—	2	2	34	25
Norfolk	—	56	56	1,799	1,310
Northants	—	25	25	597	664
Northumberland	1	36	37	1,209	803
Notts	1	112	113	2,639	1,506
Oxford	—	11	11	265	236
Rutland	—	1	1	24	12
Salop	3	65	68	2,042	1,225
Soke of Peterborough	—	—	—	—	—
Somerset	1	98	99	2,501	1,558
Staffs	2	103	105	3,163	2,072
Suffolk (East)	—	27	27	544	392
Suffolk (West)	1	26	27	553	472
Surrey	1	47	48	1,300	830
Sussex (East)	2	53	55	1,719	1,225
Sussex (West)	—	36	36	1,129	662
Warwick	4	63	67	1,683	1,306
Westmorland	2	1	3	51	21
Wilts	1	40	41	1,670	945
Worcester	1	80	81	1,612	904
Yorks (E.R.)	2	46	48	812	609
Yorks (N.R.)	—	59	59	1,331	921
Yorks (W.R.)	4	108	112	2,711	1,327
WALES					
Anglesey	1	9	10	161	115
Brecon	—	5	5	99	68
Caernarvon	—	25	25	483	214
Cardigan	1	28	29	599	406
Carmarthen	2	148	150	2,936	1,566
Denbigh	—	11	11	213	108
Flint	1	25	26	625	325
Glamorgan	—	35	35	561	283
Merioneth	—	6	6	93	31
Monmouth	1	7	8	165	123
Montgomery	—	1	1	6	—
Pembroke	—	9	9	243	256
Radnor	—	1	1	4	—
TOTALS	52	2,765	2,817	73,523	45,657

Notes.—(1) Operative periods of undertakings: 1 year, 790; 2 years 175; 3 years, 1,852. (2) Undertakings renewed for further periods: 1 year, 9; 2, years, 2; 3 years, 9. (3) Undertakings not renewed at end of operative periods, 89. (4) The figures showing the number of undertakings notified during the mon.h relate to entirely fresh undertakings and do not include undertakings renewed for further periods. Undertakings which have been cancelled or not renewed are not included in the figures for previous notifications.

County	Undertakings Notified	Total Undertakings		
	During month	Previously	Number	Number of cattle: Cows	Number of cattle: Heifers
SCOTLAND					
Aberdeen	—	17	17	891	381
Angus	—	13	13	540	345
Argyll	—	—	—	—	—
Ayr	—	10	10	350	222
Banff	—	1	1	120	20
Berwick	—	1	1	22	7
Bute	—	—	—	—	—
Caithness	—	—	—	—	—
Clackmannan	—	1	1	19	14
Dumfries	—	12	12	617	564
Dunbarton	—	1	1	60	40
East Lothian	—	1	1	20	8
Fife	1	18	19	623	458
Inverness	—	1	1	47	20
Kincardine	—	1	1	40	55
Kinross	—	3	3	60	43
Kirkcudbright	—	5	5	733	601
Lanark	—	6	6	274	185
Midlothian	—	—	—	—	—
Moray	—	—	—	—	—
Nairn	—	—	—	—	—
Orkney	—	—	—	—	—
Peebles	—	—	—	—	—
Perth	—	9	9	274	214
Renfrew	—	4	4	151	101
Ross-shire	—	3	3	130	62
Roxburgh	—	—	—	—	—
Selkirk	—	—	—	—	—
Stirling	—	7	7	291	243
Sutherland	—	4	4	85	39
West Lothian	—	2	2	75	22
Wigtown	—	15	15	1,247	708
Zetland	—	—	—	—	—
TOTALS	1	135	136	6,669	4,352

Notes.—(1) Duration of undertakings: 1 year, 36; 2 years, 7; 3 years, 93. (2) Undertakings renewed for a further period (included in column 2 of statement): 1 year, 114; 2 years, 9; 3 years, 71. (3) Undertakings expired and not renewed (not included in column 2 of statement): 263. (4) The figures showing the number of undertakings notified during the month relate to entirely fresh undertakings.

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NEW ZEALAND LIVESTOCK IMPORT REGULATIONS

As already intimated in our columns, the regulations governing the importation of livestock into New Zealand from Britain have recently been altered to permit of direct importation without a period of quarantine. In explaining the chief provisions of the new regulations, reports *The Scottish Farmer*, the Minister of Agriculture, Mr. Cullen, said that the embargo on the direct importation of cattle, sheep and pigs from the United Kingdom had been in operation since 1924 because of serious outbreaks of foot-and-mouth disease. As a consequence, importers were required to arrange for stock to be shipped *via* an intermediate country—either Canada or Tasmania—where a period of domicile was necessary. All other Empire countries permitted direct importation under certain quarantine safeguards. The Department of Agriculture considered that if similar safeguards were in operation there would be no risk of introducing serious animal diseases into New Zealand. The New Zealand Royal Agricultural Society, the Dominion Council of Federated Farmers of New Zealand and other organizations had asked that direct importation be permitted.

Under the new regulations stock for export to New Zealand would require to have been domiciled in Great Britain from birth, or for at least three months immediately before their removal to a quarantine station controlled by the British Ministry of Agriculture, Mr. Cullen added. The animals would be subject to inspection and testing for certain diseases before entry to and removal from the quarantine station for shipment to New Zealand. The period of quarantine in Britain would be not less than 40 days. All fodder or litter provided for the use of the stock on the voyage to New Zealand would require to be obtained from districts which had been free from foot-and-mouth disease for a period of at least six months.

On arrival in New Zealand the animals would be subject to another veterinary examination and a period of 30 days' quarantine. The only quarantine station available in New Zealand was at Soames Island in Wellington Harbour. Therefore, in the meantime animals would have to be shipped on vessels with Wellington as a port of call. However, the Department was considering the establishment of a quarantine station in Auckland Harbour to serve the Auckland district. It was hoped that a suitable site would be found soon.

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DONKEYS PLEAD THEIR OWN CASE

"I refrain from comment as the donkeys speak for themselves," writes an R.A.V.C. officer, stationed in India, in forwarding the following message, published by the New Delhi office of *The Statesman*:

"Nearly two dozen donkeys let loose in the municipal compound by their keepers, with their full-throated braying to-day succeeded in getting their maintenance costs increased by the municipal board without any discussion of the representation presented by the donkeymen.

"The question of increased maintenance allowance for donkeys had been hanging fire for a long time. Having reached the end of their patience the donkeymen marched in procession to the municipal office with their animals, whose braying created such pandemonium that the chairman and members of the board were ready to make peace on any terms.

"The representation has been accepted in full and the increased cost to be incurred will be included in the budget."

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

Correspondents should write as briefly as possible and letters should not exceed 350 words.

INTRODUCTION OF THE SINGLE INTRADERMAL COMPARATIVE TEST

Sir,—In the course of my presidential address to the Eastern Counties Division last July I deplored the failure by the Animal Health Division to publish an up-to-date memorandum on the interpretation of the comparative test.

A.H.D. Circular No. 470 has now been received—a guide to successful estimation—Tuberculin Testing Without Tears, in fact. Might we not have been spared the following which, surely, is worth quoting:

"The term 'inconclusive reactor' is used to refer to an animal in respect of which the result of the test is inconclusive; the term 'doubtful reaction' is used to refer to a reaction of a particular injection site which is neither positive nor negative."

Not since the profound discovery that a rural dean was one who performed ruri-decanal functions have I encountered so manifest a truth. The long period of waiting has been amply rewarded.

Yours faithfully,

Long Planting, N. F. Pollock.
West Runton,
Cromer,
Norfolk.
May 25th, 1947.

P.S.—Regretfully I confess my neglect of metaphysics. Will some charitable, deep-thinking member explain to me the essential difference between an inconclusive reactor and a doubtful ditto?

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NEWCASTLE DISEASE

Sir,—I have been interested to read the correspondence in your columns on the above subject, and I am writing to correct a misconception in regard to the "Indian" vaccine used against this (Ranikhet) disease.

The vaccine prepared by Iyer & Dobson at Weybridge against this disease has not been used in the field in India. The strain of the virus used in the preparation of this vaccine, when being brought to India, was unfortunately lost en route and efforts to repeat the previous work were unsuccessful.

However, Haddow, working independently at Mukteswar, produced a vaccine, also grown on embryonated chicken eggs but treated differently from the method employed by Iyer & Dobson, and this vaccine was given its first large-scale field trial on 3,000 birds at the Central Poultry Farm, Lucknow, in July, 1944. The results were so successful that it was immediately taken up by the Military Farms Department and civil organizations throughout India, and presumably it was this "Indian" vaccine which was used to combat the Palestine outbreak in 1945-46.

If Mr. Haddow sees this letter, I hope he may be induced to give us some more details regarding the preparation of his vaccine, for I believe so far no account of this very important piece of work has appeared in the scientific press.

Yours faithfully,

Adbury Springs, Frank Ware.
Newbury.
June 8th, 1947.

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REDUCTION OF TORSION OF THE BOVINE UTERUS

Sir,—I should like to endorse Mr. Auld's experience with reference to reduction of torsio uteri in the bovine, appearing in the *Record* of the 7th instant. I also have found it quite unnecessary to roll my cows. As will be obvious, however, I have had to cast and roll the few cases of the same condition which have been encountered in the mare.

On one point I am in some disagreement—with regard to anaesthesia. I have found that it is a very distinct advantage to administer epidural anaesthesia, thereby rendering the vagina less rigid as well as obviating straining while manipulating the uterus into position. Admittedly, this usually delays delivery for two or three hours but I have seen no untoward sequelae as a result.

Yours faithfully,

Holly Bush House, Edward Wilkinson.
139, Osmaston Road,
Derby.
June 9th, 1947.

SUPERFECÚNDATION

Sir,—The following history may be of interest:
Subject, a pedigree Guernsey heifer.
Served July 9th, 1946.
Aborted a foetus October 27th, 1946.
Served October 30th, 1946.
Aborted a foetus between January 1st and 6th, 1947.
Served January 7th, 1947.
Delivered a normal full-term calf on April 28th, 1947.

Yours faithfully,

Eden House, G. S. Muir.
Bury Road,
Stowmarket.
May 25th, 1947.

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MALIGNANT TUMOURS—A REQUEST

Sir,—As a result of your kindness in publishing my request for malignant tumours I have received from all parts of the country more than sufficient for my requirements. I am most grateful to practitioners and others for their ready response.

Yours faithfully,

Grosvenor House, H. A. H. McKee.
Carlton Road,
Pontefract.

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REFUSAL OF PRIORITY IN THE DELIVERY OF NEW MOTOR CARS

Sir,—I was horrified to notice in this week's issue of *The Veterinary Record* that when the Minister of Supply was asked if he would extend to veterinary surgeons priority in the delivery of new motor cars he flatly refused. Why is this?

The number required to supply this great want would be small in comparison with priorities already granted to others. One must, therefore, presume the Minister in question considers our calling too small and too unimportant to merit his sympathetic consideration and in so far as he is concerned, if practitioners' cars break down—then, they must needs do their work on foot or on horseback!

I fear this is one more reminder that we are a profession with few privileges. Is it not, therefore, time we were asserting our rights in a more aggressive manner than we have hitherto done in the past—and that, too, by direct action, if needs be.

This Government is afraid of the working man taking priority over the professional man of to-day—by reason of his numerical strength at the polling stations; hence he gets all he asks for. We cannot pull our weight in these directions, but if we are small in numbers, we are great in our capacity to serve the State and the nation to their common good and if the Minister of Supply is adamant, it is up to the Minister of Agriculture to see that we have the proper means of transport to visit our cases. Is not the time opportune, with the nation's food in jeopardy, for us to take the strongest measures to make the "powers that be" realize that if we are a small profession, we are a valuable and virile one determined to safeguard our rights at all costs: "*Nemo me impune lacessit.*"

I submit, therefore, every benefit conferred upon the sister profession should as a matter of course be extended to us where such benefits apply and to bring such a weal to fruition I would like to see a closer liaison between the two sister professions so that they might help us to fight our battles too. I venture to point out that if doctors merit priority in obtaining new motor cars, how much more so veterinary surgeons, who cover mileage double or treble that of their confrères in the exercise of their professional duties.

Yours faithfully,

Fryern Hall, W. M. Scott.
Bridgwater,
Somerset.
May 11th, 1947.

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R.C.V.S. COUNCIL ELECTION

Sir,—I wish, through your columns, to express my very sincere thanks to those Fellows and Members who kindly recorded votes in my favour at the recent Council Election of the Royal College of Veterinary Surgeons, and I would like to take this opportunity of wishing the eight Members who were returned to the Council continued and renewed success in the heavy duties which at this time lie upon them.

Yours faithfully,

Streatley House, Harold Burrow.
Streatley, Berks.
June 7th, 1947.

EDINBURGH CONGRESS, 1947

The following is the Programme of the Association's Congress to be held at the Royal (Dick) Veterinary College, Summerhall Square, Edinburgh, 9, from July 27th to August 1st (inclusive), except where otherwise stated.

SUNDAY, JULY 27TH

7.30 p.m. to 9.30 p.m.	Reception by Scottish Metropolitan Division in Royal (Dick) Veterinary College.

MONDAY, JULY 28TH

10.30 a.m.	Opening of Congress by Rt. Hon. Sir J. I Falconer, Lord Provost of Edinburgh.
11 a.m.	Opening of Exhibition of Drugs and Surgical Instruments, etc., by President, N.V.M.A.
11.30 a.m.	Council Meeting.
2 p.m.	Paper: "Toxicological Problems in Veterinary Practice." By G. F. Boddie, B.Sc., M.R.C.V.S., F.R.S.E. Openers of discussion: H. H. Green, D.Sc., and T. M. Mitchell, M.R.C.V.S., D.V.S.M. Chairman: J. N. Ritchie, B.Sc., M.R.C.V.S., D.V.S.M. Recording Secretary: J. S. S. Inglis, B.Sc., M.R.C.V.S.
2 p.m.	Ladies' Outing to Zoological Gardens.
8 p.m. to 1 a.m. ..	President's Reception and Dance (Freemasons' Hall, 96, George Street, Edinburgh, 2).

TUESDAY, JULY 29TH

9.30 a.m.	Paper: "Retention of the Placenta in the Bovine." By A. J. Kennedy, B.Sc., M.R.C.V.S. Openers of discussion: A. S. Chapman, M.R.C.V.S., and J. M. Rorrison, M.R.C.V.S. Chairman: R. W. Johnston, M.R.C.V.S. Recording Secretary: A. Thomson, M.R.C.V.S.
11 a.m.	V.V.B.F. Ladies' Guild Annual General Meeting.
2 p.m.	Visit to Laboratories of the Animal Diseases Research Association, Moredun Institute, Gilmerton, or to Corporation Markets and Slaughter-house, Gorgie, Edinburgh.
7.30 p.m.	Civic Reception by the Corporation of the City of Edinburgh. (City Chambers, High Street, Edinburgh.)

WEDNESDAY, JULY 30TH

9.30 a.m.	Paper: "The Immunology and Epidemiology of Virus Diseases." By M. Crawford, M.R.C.V.S. Openers of discussion: I. A. Galloway, D.Sc., M.R.C.V.S., and D. R. Wilson, D.Sc., M.R.C.V.S., D.V.S.M., F.R.S.E. Chairman: D. C. Matheson, M.R.C.V.S., D.V.S.M., F.R.S.E. Recording Secretary: J. W. Emslie, B.Sc., M.R.C.V.S.
10 a.m.	Ladies' Golf Tournament at Liberton Golf Course.
1.45 p.m.	Congress Photograph.
2.30 p.m.	Ladies' Outing to Lauriston Castle.
2.30 p.m.	Annual General Meeting.
7.30 p.m. for 8 p.m...	Annual Dinner in Freemasons' Hall.

THURSDAY, JULY 31ST

9.30 a.m.	All-day Excursion to Trossachs.
10 a.m.	All-day Excursion to Borders.
10 a.m.	Men's Golf Tournament at Luffness Golf Course.
10.30 a.m.	Annual General Meeting of the Association of Veterinary Teachers and Research Workers.
8.30 p.m. to 1 a.m. ..	Ladies' Veterinary Benevolent Guild Dance.

FRIDAY, AUGUST 1ST

10 a.m.	Closing Meeting.
11 a.m.	Council Meeting.
2 p.m.	Conducted Tour of Royal Mile, Edinburgh.